

# INVESTIGATOR'S ANNUAL REPORT

## National Park Service

All or some of the information provided may be available to the public

<b>Reporting Year:</b> 1991	<b>Park:</b> Shenandoah NP
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<b>Name:</b> D. Gray <b>Phone:</b> n/a <b>Email:</b> n/a	
<b>Permit#:</b> SHEN1991ABCJ	
<b>Park-assigned Study Id. #:</b> unknown	
<b>Project Title:</b> Development of a predictive model of gypsy moth egg phenology	
<b>Permit Start Date:</b> Jan 01, 1998	<b>Permit Expiration Date</b> Jan 01, 1998
<b>Study Start Date:</b> Jan 01, 1989	<b>Study End Date</b> Jan 01, 1992
<b>Study Status:</b> Completed	
<b>Activity Type:</b> Other	
<b>Subject/Discipline:</b> Invertebrates (Insects, Other)	
<b>Objectives:</b> The objective of our study is to develop a model of gypsy moth egg phenology that will predict time of hatch, pattern of hatch and hatch success under a variety of environmental and parental (larval) conditions. We propose to describe the relationship between temperature and development rate for each of three recognized phases of egg development, the relationships between temperature thresholds of the three phases, possible constraints on development of one phase imposed by a preceding phase, and to develop a three phase temperature-dependent model of gypsy moth egg phenology and survival.	
<b>Findings and Status:</b> There were significant differences between egg masses from the three states in the amount of time necessary to satisfy chilling requirements. Fiftieth percentile egg hatch occurred approximately 5 days later for Virginia eggs than for Massachusetts eggs. Eggs from Pennsylvania were intermediate in their cold requirements. These differences may be the result of selection pressure away from individuals that would respond to warm temperatures in the early spring of southern regions.	
<b>For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?</b> No	
<b>Funding provided this reporting year by NPS:</b> 0	<b>Funding provided this reporting year by other sources:</b> 26000
<b>Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college</b>	
<b>Full name of college or university:</b>	<b>Annual funding provided by NPS to university or college this reporting year:</b>

n/a	0
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